

REMARKS

Applicants' undersigned attorney thanks the Examiner for her comments. Applicants respectfully request reconsideration of this patent application, particularly in view of the above Amendment and the following remarks. Currently, Claims 1-17 are pending.

Applicants invention is a nonwoven fabric having a mélange appearance (i.e. an alternation of color and/or intensity) imparted by a fiber part and high durability imparted by a matrix binder. The fiber part includes at least one of a mélange appearance fiber and a mixture of at least two fibers with different dyeability characteristics. The matrix binder includes a polyurethane including soft and rigid segments. The soft segments consist essentially of a mixture at least one polycarbonate polyol selected from the group consisting of polypentamethylenecarbonatoglycol, polyhexamethylenecarbonatoglycol and polyheptamethylenecarbonatoglycol and at least one polyester polyol selected from the group consisting of polyhexamethyleneadipateglycol, polyneopentyladipateglycol, and polycaprolactonediol. The rigid segments consist essentially of urethane groups and ureic groups wherein the urethane groups are derived by the reaction of isocyanate with polyols and the ureic groups are derived by the reaction of isocyanate with water.

Amendment to the Specification

The paragraph appearing on page 9, lines 15-19 has been amended to correct a typographical error appearing on line 18. Particularly, a close parenthesis symbol “)” has been inserted after the phrase “(deriving from the reaction between free isocyanate groups and water).” Support is found on page 6, lines 1-6.

Amendment to the Claims

Currently Claims 1-17 are pending with Claims 12-17 withdrawn. Claims 1-11 have been examined with no claims allowed.

Claim 1 has been amended to recite that the soft segments comprise at least one polycarbonate polyol and at least one polyester polyol as recited in Claim 3. Support is found on page 9, lines 14-18 and in Example 1. Accordingly Claim 3 has been canceled and Claim 4 has been amended to depend from Claim 1.

Claim 1 has been further amended to recite that the rigid segments consist essentially of urethane groups derived by the reaction of isocyanate with polyols and ureic groups derived by the reaction between isocyanate with water. Support is found on page 6, lines 1-6.

Interview Summary

Applicants' undersigned attorney thanks Examiner Cole for her time, comments, and courtesies extended during a telephone interview on 12 May 2006.

Applicants' undersigned attorney and Examiner Cole discussed the rejection of Claim 1-11 under USC §103(a) over of U.S. Patent Application Publication 2003/0252254 to Bellucci et al. in view of U.S. Patent 4,525,169 to Higuchi et al.

The undersigned brought to the Examiner's attention Applicants' priority claim to Italian Patent Application MI 2002 A 002685 filed 19 December 2002, a certified copy of which was received by the United States Patent and Trademark Office on 20 July 2004.

Examiner Cole agreed that Applicants' perfected priority claim would negate the rejection based on the combination of Bellucci with Higuchi.

Claim Rejections - 35 USC §103

A. Bellucci/Higuchi

The rejection of Claims 1-11 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication 2003/0252254 to Bellucci et al. in view of U.S. Patent 4,525,169 to Higuchi et al. is respectfully traversed.

As discussed above in the Interview Summary, Applicants' perfected a priority claim to Italian Patent Application MI 2002 A 02685 which was filed on 19 December 2002. Because the Bellucci application was not published until 14 August 2003, Bellucci is not available as prior art under USC §102 and, thus, may not be used as the basis of a rejection under USC §103(a).

For at least the reasons given above, reconsideration and withdrawal of this rejection is respectfully requested.

B. Mizoguchi/Traubel/Higuchi

The rejection of Claims 1-11 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,798,165 to Mizoguchi in view of U.S. Patent

3,920,588 to Träubel et al. and U.S. Patent 4,525,169 to Higuchi et al. is respectfully traversed.

Applicants' invention as recited in Claim 1 requires that the nonwoven fabric having a mélange appearance and high durability include a polyurethane matrix binder which includes soft segments that consist essentially of at least one polycarbonate polyol such as polypentamethylenecarbonatoglycol, polyhexamethylene-carbonatoglycol or polyheptamethylenecarbonatoglycol and at least one polyester polyol such as polyhexamethyleneadipateglycol, polyneopentyladipateglycol or polycaprolactone diol and rigid segments that consist essentially of urethane groups derived from the reaction of isocyanate groups with polyols and ureic groups derived from the reaction between isocyanate groups and water.

Mizoguchi discloses a porous leather-like or suede-like product having good durability and flexibility formed by wet coagulating a polyurethane comprising soft segments of repeating units from a polycarbonate, those from a diethylene glycol polyester and those from a tetramethylene glycol-base polyester, and hard segments of an aromatic diisocyanate and ethylene glycol on a nonwoven web (Abstract).

To establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The references as a whole must suggest the desirability and thus the obviousness of making the combination and there must be a reasonable expectation of success in making the combination.

Mizoguchi discloses that in order to prepare a product having industrial applicability the polyurethane must include soft segments including specific polycarbonate and polyester diols, namely: a polycarbonate diol containing a hydrocarbon having 5 or 6 carbon atoms; a polyester diol containing a tetramethylene group; and a polyester diol having a $-(O-CH_2CHR_5)_2-O-$ functional group and a functional group including 4 to 8 carbon atoms (col. 3, line 66 – col. 4, line 43). The absence of any one of these three components results in a product having low industrial applicability.

Applicants draw the Examiner's attention to the Comparative Examples of Mizoguchi. In particular, Comparative Examples 1 and 4 disclose that

polyurethane without a diethylene glycol-based polyester yielded a sheet having a rather stiff hand and low industrial applicability (col. 12, lines 24-45 and Col. 14, line 48- Col. 15, line 4, respectively). Comparative Example 3 discloses that polyurethane without a tetramethylene glycol-based polyester produces a sheet with a “big problem”, low flexibility and low industrial applicability (Col. 13, lines 16-44). Finally, Comparative Example 5 discloses that polyurethane that is free of a tetramethylene glycol-based polyester and a diethylene glycol-based polyester produces a sheet having low thickness retention, high stiffness and low industrial applicability (Col. 15, lines 12-35). Thus, Mizoguchi teaches away from polyurethanes including soft segments that are free of tetramethylene glycol-based polyester groups and diethylene glycol-based polyesters.

Träubel alone, or in combination with Higuchi, does not overcome the limitations of Mizoguchi. Träubel discloses a process for the production of microporous sheet structures which include a polyurethane prepared in a mixture of a polar solvent and an organic solvent (Col. 2, lines 21-44). However, Träubel does not disclose or suggest a polyurethane matrix binder which includes soft segments that consist essentially of at least one polycarbonate polyol such as polypentamethylenecarbonatoglycol, polyhexamethylene-carbonatoglycol or polyheptamethylenecarbonatoglycol and at least one polyester polyol such as polyhexamethylenedipateglycol, polyneopentyladipateglycol or polycaprolactone diol.

Higuchi alone, or in combination with Träubel, also does not overcome the limitations of Mizoguchi. Higuchi discloses an artificial grain leather having different color spot groups comprised of ultra fine fibers in which one side of the fibrous substrate has two types of colors differing in hue and/or lightness value and being covered with transparent resin layers (Abstract). The transparent resin layer may include polyurethane (Col. 5, lines 43-49). However, Higuchi is silent as to the composition of the polyurethane resin layer or coating.

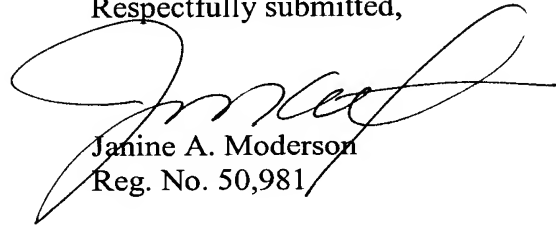
For at least the reasons given above, Applicants respectfully submit that Mizoguchi alone, or in combination with Träubel and/or Higuchi, does not disclose or suggest Applicants’ invention as recited in Claim 1. Because the limitations of Claim 3 have been added to Claim 1 and Claims 2 and 4-11 depend

from Claim 1, these claims are also patentable over Mizoguchi in view of Träubel and Higuchi. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes that this case is now in condition for allowance. If the Examiner feels that any issues remain, then Applicant's undersigned attorney would like to discuss the case with the Examiner. The undersigned can be reached at (847) 490-1400.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Janine A. Moderson', is written over the typed name and registration number.

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